



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



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**Cumberland County Commissioners
Cumberland County Jail
Cumberland County
Portland, Maine
A-552-71-H-N/A (SM)**

**Departmental
Findings of Fact and Order
Air Emission License
Renewal/Amendment
After the Fact**

FINDINGS OF FACT

After review of the air emissions license renewal application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes Annotated (M.R.S.A.), §344 and §590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

The Air Emission License for the Cumberland County Jail (CCJ) expired on October 29, 2008. CCJ has applied to renew their expired license permitting the operation of emission sources associated with their correctional facility.

CCJ has requested in this application to include the addition of two new 75 kW cogeneration (combination heat and power) units.

The equipment addressed in this license is located at 50 County Way, in Portland, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Boilers

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (scf/hr)</u>	<u>Fuel Type</u>	<u>Install. Date</u>	<u>Stack #</u>
Boiler #1	7.3	7,087	Natural Gas	1993	1
Boiler #2	7.3	7,087	Natural Gas	1993	1
Kitchen Boiler	1.2	1,165	Natural Gas	1993	1
Furnace *	0.8	777	Natural Gas	1993	3

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17 STATE HOUSE STATION
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(207) 287-7688 FAX: (207) 287-7826
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1235 CENTRAL DRIVE, SKYWAY PARK
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- * The Furnace is rated less than 1.0 MMBtu/hr heat input and is therefore considered insignificant pursuant to 06-096 CMR 115, Appendix B(B)(2) and is listed here for inventory purposes only. The unit may still be subject to the opacity requirements of 06-096 CMR 101.

Generators

<u>Equipment</u>	<u>Power Output (kW)</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Firing Rate</u>	<u>Fuel Type, % sulfur</u>	<u>Install. Date</u>	<u>Stack #</u>
Emergency Generator	1500	13.3	97 gal/hr	Diesel, 0.0015%	Approx. 1993	2
CoGen #1	75	1.0	927 scf/hr	Natural Gas	2013	4
CoGen #2	75	1.0	927 scf/hr	Natural Gas	2013	4

C. Application Classification

The previous air emission license for CCJ expired on October 29, 2008. A complete application was not submitted prior to the expiration date, therefore CCJ is considered to be an existing source applying for an after-the-fact renewal with an amendment. The modification of a minor source is considered a major or minor modification based on whether or not expected emission increases exceed the "Significant Emission Levels" as defined in the Department's regulations. The emission increases are determined by subtracting the current licensed emissions preceding the modification from the maximum future licensed allowed emissions, as follows:

<u>Pollutant</u>	<u>Current License (TPY)</u>	<u>Future License (TPY)</u>	<u>Net Change (TPY)</u>	<u>Sig. Level</u>
PM	2.7	3.1	+ 0.4	100
PM ₁₀	2.7	3.1	+ 0.4	100
SO ₂	0.2	0.4	+ 0.2	100
NO _x	7.1	9.1	+ 2.0	100
CO	4.8	9.0	+ 4.2	100
VOC	0.4	1.8	+ 1.4	50

The Department has determined this to be a minor modification and an after-the-fact renewal of a minor source, and has been processed as such through *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (as amended). With the fuel limit on the boilers and the operating hours restriction on the emergency generator, the facility is licensed below the major source thresholds for criteria pollutants and is considered a synthetic minor. With the fuel limit on the boilers and the operating hours restriction on the emergency

generator the facility is licensed below the major source thresholds for hazardous air pollutants (HAP) and is considered an area source of HAP.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for an after-the-fact renewal requires an analysis similar to a Best Available Control Technology analysis per 06-096 CMR 115 (as amended).

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Boilers

CCJ operates three boiler units, designated Boilers #1 and #2 and the Kitchen Boiler. The boilers are rated at 7.3 MMBtu/hr, 7.3 MMBtu/hr, and 1.2 MMBtu/hr, respectively. All three units fire natural gas, were installed in 1993 and exhaust to common Stack #1.

Due to the individual size of each unit, the boilers are not subject to the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, for units greater than 10 MMBtu/hr manufactured after June 9, 1989.

1. BACT Findings

The BACT emission limits for the boilers were based on the following:

Natural Gas

PM/PM ₁₀	–	0.05 lb/MMBtu based on 06-096 CMR 115, BACT
SO ₂	–	0.6 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
NO _x	–	100 lb/MMscf based on AP-42, Table 1.4-1, dated 7/98
CO	–	84 lb/MMscf based on AP-42, Table 1.4-1, dated 7/98

- VOC - 5.5 lb/MMscf based on AP-42, Table 1.4-2, dated 7/98
Opacity - 06-096 CMR 101

The BACT emission limits for the boilers are the following:

<u>Unit</u>	<u>PM</u> <u>(lb/hr)</u>	<u>PM₁₀</u> <u>(lb/hr)</u>	<u>SO₂</u> <u>(lb/hr)</u>	<u>NO_x</u> <u>(lb/hr)</u>	<u>CO</u> <u>(lb/hr)</u>	<u>VOC</u> <u>(lb/hr)</u>
Boiler #1	0.37	0.37	0.01	0.71	0.60	0.04
Boiler #2	0.37	0.37	0.01	0.71	0.60	0.04
Kitchen Boiler	0.06	0.06	0.01	0.12	0.10	0.01

Visible emissions from Stack #1 (serving Boiler #1, Boiler #2 and the Kitchen Boiler) shall not exceed 10% opacity on a 6-minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period.

2. 40 CFR Part 63 Subpart JJJJJ

Boiler #1, Boiler #2 and the Kitchen Boiler are not subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ). The units meet the definition of "gas-fired boilers" which is defined as any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year [40 CFR Part 63.11237]. Therefore, the boilers are exempt from 40 CFR Part 63, Subpart JJJJJ.

C. Emergency Generator

CCJ operates one Caterpillar 4-cycle Emergency Generator to back-up the utility line power. The Emergency Generator is rated at 13.3 MMBtu/hr (1500 kW power output) and fires diesel fuel.

1. BACT Findings

The BACT emission limits for the Emergency Generator are based on the following:

Diesel Fuel

- PM/PM₁₀ - 0.12 lb/MMBtu from 06-096 CMR 103
SO₂ - Combustion of diesel fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur)

NO_x - 3.2 lb/MMBtu based on AP-42, Table 3.4-1, dated 10/96
CO - 0.85 lb/MMBtu based on AP-42, Table 3.4-1, dated 10/96
VOC - 0.09 lb/MMBtu based on AP-42, Table 3.4-1, dated 10/96
Opacity - 06-096 CMR 101

The BACT emission limits for the generator are the following:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Emergency Generator	1.60	1.60	0.02	42.56	11.31	1.20

Visible emissions from the Emergency Generator shall not exceed 20% opacity on a 6-minute block average, except for no more than two (2) six (6) minute block averages in a 3-hour period.

2. 40 CFR Part 63, Subpart ZZZZ

The federal regulation 40 CFR Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines* is applicable to the emergency generator listed above. The unit is considered an existing, emergency stationary reciprocating internal combustion engines at an area HAP source and is not subject to New Source Performance Standards regulations. EPA's August 9, 2010 memo (*Guidance Regarding Definition of Residential, Commercial, and Institutional Emergency Stationary RICE in the NESHAP for Stationary RICE*) specifically does exempt this unit from the federal requirements because it is categorized as an institutional emergency engine; however the engine is contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), and therefore is required to comply with all applicable requirements of 40 CFR Part 60, Subpart ZZZZ.

a. Emergency Definition:

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the following criteria:

- (1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the

facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc. There is no time limit on the use of emergency stationary RICE in emergency situations.

(2) Paragraph (1) above notwithstanding, the emergency stationary RICE may be operated for any combination of the purposes specified below for a maximum of 100 hours per calendar year:

- (i) Maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.
- (ii) Emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.
- (iii) Periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Paragraphs (1) and (2) above notwithstanding, emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations. These 50 hours are counted as part of the 100 hours per calendar year for maintenance checks and readiness testing, emergency demand response, and periods of voltage deviation or low frequency, as provided in paragraph (2) above.

The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity, except provided in the following paragraphs:

- (i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution center.
- (ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
 - (a) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.
 - (b) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
 - (c) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
 - (d) The power is provided only to the facility itself or to support the local transmission and distribution system.
 - (e) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

The Emergency Generator shall be limited to the usage outlined in §63.6640(f) and therefore may be classified as an existing emergency stationary RICE as defined in 40 CFR Part 63, Subpart ZZZZ. Failure to comply with all of the requirements listed in §63.6640(f) may cause the engine to not be considered an emergency engine and therefore subject to all the requirements for non-emergency engines.

b. 40 CFR Part 63, Subpart ZZZZ Requirements:

(1) Operation and Maintenance Requirements

	Operating Limitations (40 CFR §63.6603(a) and Table 2(d))
Compression ignition (diesel, fuel oil) units: - Emergency Generator	- Change oil and filter every 500 hours of operation or annually, whichever comes first; - Inspect the air cleaner every 1000 hours of operation or annually, whichever comes first, and replace as necessary; and - Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

The Emergency Generator shall be operated and maintained according to the manufacturer's emission-related written instructions or CCJ shall develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR §63.6625(e)]

(2) Optional Oil Analysis Program

CCJ has the option of utilizing an oil analysis program which complies with the requirements of §63.6625(i) in order to extend the specified oil change requirement. If this option is used, CCJ must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR §63.6625(i)]

(3) Non-Resettable Hour Meter Requirement

A non-resettable hour meter shall be installed and operated on the generator. [40 CFR §63.6625(f)]

(4) Startup Idle and Startup Time Minimization Requirements

During periods of startup the facility must minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. [40 CFR §63.6625(h) & 40 CFR Part 63, Subpart ZZZZ Table 2d]

(5) Annual Time Limit for Maintenance and Testing

The generator shall be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year

of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise supply power as part of a financial arrangement with another entity unless the conditions in §63.6640(f)(4)(ii) are met). [40 CFR §63.6640(f)]

(6) Recordkeeping

CCJ shall keep records that include maintenance conducted on the generator and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the generator is operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), CCJ shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [40 CFR §63.6655(e) and (f)]

(7) Requirements for Demand Response Availability Over 15 Hours/Year

If CCJ operates or is contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), the facility shall submit an annual report containing the information in §63.6650(h)(1)(i) through (ix). The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

Director, Office of Ecosystem Protection
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, MA 02109-3912

[40 CFR §63.6650(h)]

D. CoGen #1 and CoGen #2

CCJ operates two identical Tecogen induction-based cogeneration (combined heat and power) generators, designated CoGen #1 and CoGen #2. The generators are each rated at 1.0 MMBtu/hr (75 kW power output) and fire natural gas. The generators were installed in 2013.

1. BACT Findings

The BACT emission limits for CoGen #1 and CoGen #2 were based on the following:

Natural Gas

- PM/PM₁₀ – 0.05 lb/MMBtu based on 06-096 CMR 115, BACT
- SO₂ – 5.88E-04 lb/MMBtu based on AP-42, Table 3.2-3, dated 7/00
- NO_x – 1.0 g/HP-hr based on 40 CFR Part 60, Subpart JJJJ, Table 1
- CO – 2.0 g/HP-hr based on 40 CFR Part 60, Subpart JJJJ, Table 1
- VOC – 0.7 g/HP-hr based on 40 CFR Part 60, Subpart JJJJ, Table 1
- Opacity – 06-096 CMR 115, BACT

The BACT emission limits for CoGen #1 and CoGen #2 are the following:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
CoGen #1	0.05	0.05	0.01	0.24	0.48	0.17
CoGen #2	0.05	0.05	0.01	0.24	0.48	0.17

Visible emissions from CoGen #1 and CoGen #2 shall each not exceed 10% opacity on a 6-minute block average, except for no more than two (2) six (6) minute block averages in a 3-hour period.

2. 40 CFR Part 60, Subpart JJJJ

The federal regulation 40 CFR Part 60, Subpart JJJJ, *Standards of Performance for Spark Ignition Internal Combustion Engines (SI ICE)* is applicable to CoGens #1 and #2 since the units were ordered after June 12, 2006 and manufactured after January 1, 2009. By meeting the requirements of Subpart JJJJ, the units also meet the requirements found in the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 CFR Part 63, Subpart ZZZZ.

a. 40 CFR Part 60, Subpart JJJJ Requirements:

(1) Emission Standards

CoGens #1 and #2 shall each meet the applicable emission standards for non-emergency, spark ignition, natural gas fired engines contained in 40 CFR Part 60, Subpart JJJJ, Table 1 and shown below. [40 CFR §60.4233(e)]

Engine Type and Fuel	Maximum Engine Power	Manuf. Date	Emission Standards					
			g/HP-hr			ppmvd at 15% O ₂		
			NO _x	CO	VOC	NO _x	CO	VOC
Non-Emergency SI Natural Gas	100≤HP≤500	1/1/2011	1.0	2.0	0.7	82	270	60

[40 CFR Part 60, Subpart JJJJ, Table 1]

(2) Manufacturer Certified Requirements

CoGens #1 and #2 shall be operated in one of the following ways:

- i. Operate and maintain the engines and control devices according to the manufacturer's emission-related written instructions. CCJ shall keep records of conducted maintenance to demonstrate compliance. [40 CFR §60.4243(b)(1) and §60.4243(a)(1)]
- ii. If CCJ does not operate and maintain the engine and control device according to the manufacturer's emission-related written instructions, the engines will be considered non-certified and compliance shall be demonstrated by keeping a maintenance plan and records of conducted maintenance on the units and must, to the extent possible, maintain and operate the engines in a manner consistent with good air pollution control practices for minimizing emissions. [40 CFR §60.4243(b)(1) and §60.4243(a)(2)(i)]

(3) Optional Propane Usage Requirement

CCJ may operate each engine using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations. CCJ shall keep records of such use. [40 CFR §60.4243(e)]

(4) Notification, Reporting and Recordkeeping Requirement

CCJ shall keep records that include any notifications submitted to comply with this regulation and its applicable supporting documentation, and any maintenance conducted on the engines. CCJ shall keep records of documentation that the engines are certified to meet emission standards. [40 CFR §60.4245(a)]

E. Fugitive Emissions

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed an opacity of 20%, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20% in any one (1) hour.

F. General Process Emissions

Visible emissions from any general process source shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period.

G. Annual Emissions

1. Total Annual Emissions

CCJ shall be restricted to the following annual emissions, based on a calendar year. The tons per year limits were calculated based on an operation of 100 hours/year for the Emergency Generator and a maximum operation of 8,760 hours/year for Boiler #1, Boiler #2, the Kitchen Boiler, CoGen #1 and CoGen#2:

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Boiler #1	1.6	1.6	0.1	3.1	2.6	0.2
Boiler #2	1.6	1.6	0.1	3.1	2.6	0.2
Kitchen Boiler	0.3	0.3	0.1	0.5	0.4	0.1
Emergency Generator	0.1	0.1	0.1	2.1	0.6	0.1
CoGen #1	0.2	0.2	0.1	1.1	2.1	0.7
CoGen#2	0.2	0.2	0.1	1.1	2.1	0.7
Total TPY	4.0	4.0	0.6	11.0	10.4	2.0

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans*, 40 CFR Part 52, Subpart A, §52.21 Prevention of Significant Deterioration of Air Quality rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes,

greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO₂e).

Based on the facility's fuel use limits, the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming potentials contained in 40 CFR Part 98, CCJ is below the major source threshold of 100,000 tons of CO₂e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

III.AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source shall be determined by the Department on a case-by case basis. In accordance with 06-096 CMR 115, an ambient air quality impact analysis is not required for a minor source if the total emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

<u>Pollutant</u>	<u>Tons/Year</u>
PM ₁₀	25
SO ₂	50
NO _x	50
CO	250

The total facility licensed emissions are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-552-71-H-N/A subject to the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This

License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S.A. §347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 CMR 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 CMR 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 CMR 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353-A. [06-096 CMR 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 CMR 115]
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 CMR 115]

- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [06-096 CMR 115]
- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [06-096 CMR 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
- A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
 - 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
 - 2. pursuant to any other requirement of this license to perform stack testing.
 - B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
 - C. submit a written report to the Department within thirty (30) days from date of test completion.
- [06-096 CMR 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
 - B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that

there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[06-096 CMR 115]

- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 CMR 115]
- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 CMR 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 CMR 115]

SPECIFIC CONDITIONS

(16) Boilers

A. Fuel

- 1. Boiler #1, Boiler #2 and the Kitchen Boiler are licensed to fire natural gas. [06-096 CMR 115, BACT]
- 2. Compliance shall be demonstrated by fuel records from the supplier showing the type of the fuel delivered. [06-096 CMR 115, BACT]

B. Emissions shall not exceed the following:

<u>Emission Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
Boiler #1	PM	0.05	06-096 CMR 115, BACT
Boiler #2	PM	0.05	06-096 CMR 115, BACT

C. Emissions shall not exceed the following [06-096 CMR 115, BACT]:

<u>Emission Unit</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Boiler #1	0.37	0.37	0.01	0.71	0.60	0.04
Boiler #2	0.37	0.37	0.01	0.71	0.60	0.04
Kitchen Boiler	0.06	0.06	0.01	0.12	0.10	0.01

D. Visible emissions from Stack #1 (serving Boiler #1, Boiler #2 and the Kitchen Boiler) shall not exceed 10% opacity on a 6-minute block average basis, except for no more than one (1) six (6) minute block average in a 3-hour period. [06-096 CMR 101]

(17) **Emergency Generator**

A. The Emergency Generator shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 CMR 115]

B. The fuel oil sulfur content for the Emergency Generator shall be limited to 0.0015% sulfur. Compliance shall be demonstrated by fuel records from the supplier documenting the type of fuel delivered and the sulfur content of the fuel. [06-096 CMR 115, BACT]

C. Emissions shall not exceed the following:

<u>Emission Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
Emergency Generator	PM	0.12	06-096 CMR 103(2)(B)(1)(a)

D. Emissions shall not exceed the following [06-096 CMR 115, BACT]:

<u>Emission Unit</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Emergency Generator	1.60	1.60	0.02	42.56	11.31	1.20

E. Visible emissions from the Emergency Generator shall not exceed 20% opacity on a 6-minute block average, except for no more than two (2) six (6) minute block averages in a 3-hour period. [06-096 CMR 101]

F. The Emergency Generator shall meet the applicable requirements of 40 CFR Part 63, Subpart ZZZZ, including the following:

1. No later than May 3, 2013, CCJ shall meet the following operational limitations for the compression ignition emergency generator:
 - a. Change the oil and filter annually,
 - b. Inspect the air cleaner annually and replace as necessary, and
 - c. Inspect the hoses and belts annually and replace as necessary.

A log shall be maintained documenting compliance with the operational limitations.

[40 CFR §63.6603(a) and Table 2(d); and 06-096 CMR 115]

2. Oil Analysis Program Option

CCJ has the option of utilizing an oil analysis program which complies with the requirements of §63.6625(i) in order to extend the specified oil change requirement. If this option is used, CCJ must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR §63.6625(i)]

3. Non-Resettable Hour Meter

A non-resettable hour meter shall be installed and operated on the generator. [40 CFR §63.6625(f)]

4. Maintenance, Testing, and Non-Emergency Operating Situations

- a. The generator shall be limited to 100 hours/year for maintenance checks and readiness testing, emergency demand response, and periods of voltage or frequency deviation from standards. Up to 50 hours/year of the 100 hours/year may be used in non-emergency situations (this does not include peak shaving, non-emergency demand response, or to generate income for a facility by providing power to an electric grid or otherwise to supply power as part of a financial arrangement with another entity unless the conditions in §63.6640(f)(4)(ii) are met). These limits are based on a calendar year. Compliance shall be demonstrated by a written log of all generator operating hours. [40 CFR §63.6640(f) and 06-096 CMR 115]

- b. CCJ shall keep records that include maintenance conducted on the generator and the hours of operation of the engine recorded through the non-resettable hour meter. Documentation shall include the hours spent for emergency operation, including what classified the operation as emergency and how many hours spent for non-emergency. If the generator is operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), CCJ shall keep records of the notification of the emergency situation, and the date, start time, and end time of generator operation for these purposes. [40 CFR §63.6655(e) and (f)]

5. Operation and Maintenance

The generator shall be operated and maintained according to the manufacturer's emission-related written instructions or CCJ shall develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR §63.6625(e)]

6. Startup Idle and Startup Time Minimization

During periods of startup the facility must minimize the engine's time spent at idle and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. [40 CFR §63.6625(h) & 40 CFR Part 63, Subpart ZZZZ Table 2d]

7. Requirements For Demand Response Availability Over 15 Hours Per Year

If CCJ operates or is contractually obligated to be available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or supplying power during a non-emergency situation as part of a financial arrangement with another entity as specified in §63.6640(f)(4)(ii), the facility shall submit an annual report containing the information in §63.6650(h)(1)(i) through (ix). The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form is not

available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

Director, Office of Ecosystem Protection
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, MA 02109-3912

[40 CFR §63.6650(h)]

(18) **CoGens #1 and #2**

A. CoGens #1 and #2 are licensed to fire natural gas. [06-096 CMR 115, BACT]

B. Emissions shall not exceed the following:

<u>Emission Unit</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
CoGen #1	PM	0.05	06-096 CMR 115, BACT
CoGen #2	PM	0.05	06-096 CMR 115, BACT

C. Emissions shall not exceed the following [06-096 CMR 115, BACT]:

<u>Emission Unit</u>	<u>PM (lb/hr)</u>	<u>PM₁₀ (lb/hr)</u>	<u>SO₂ (lb/hr)</u>	<u>NO_x (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
CoGen #1	0.05	0.05	0.01	0.24	0.48	0.17
CoGen #2	0.05	0.05	0.01	0.24	0.48	0.17

D. Visible emissions from CoGen #1 and CoGen #2 shall each not exceed 10% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 115, BACT]

E. CoGen #1 and CoGen #2 shall meet the applicable requirements of 40 CFR Part 60, Subpart JJJJ, including the following:

1. Manufacturer Certification

The generators shall be certified by the manufacturer as meeting the emission standards for new nonroad spark ignition engines found in 40 CFR Part 60, Subpart JJJJ, Table 1.

2. Operation and Maintenance

CoGens #1 and #2 shall be operated in one of the following ways:

- a. Operate and maintain the engines and control devices according to the manufacturer's emission-related written instructions. CCJ shall keep records of conducted maintenance to demonstrate compliance. [40 CFR §60.4243(b)(1) and §60.4243(a)(1)]
- b. If CCJ does not operate and maintain the engine and control device according to the manufacturer's emission-related written instructions, the engines will be considered non-certified and compliance shall be demonstrated by keeping a maintenance plan and records of conducted maintenance on the units and must, to the extent possible, maintain and operate the engines in a manner consistent with good air pollution control practices for minimizing emissions. [40 CFR §60.4243(b)(1) and §60.4243(a)(2)(i)]

3. Optional Propane Usage Requirement

CCJ may operate each engine using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations. CCJ shall keep records of such use. [40 CFR §60.4243 (e)]

4. Notification, Reporting and Recordkeeping Requirement

CCJ shall keep records that include any notifications submitted to comply with this regulation and its applicable supporting documentation, and any maintenance conducted on the engines. CCJ shall keep records of documentation that the engines are certified to meet emission standards. [40 CFR §60.4245(a)]

(19) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed an opacity of 20%, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20% in any one (1) hour. [06-096 CMR 101]

(20) **General Process Sources**

Visible emissions from any general process source shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period. [06-096 CMR 101]

Cumberland County Commissioners
Cumberland County Jail
Cumberland County
Portland, Maine
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Departmental
Findings of Fact and Order
Air Emission License
Renewal/Amendment
After the Fact

- (21) CCJ shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S.A. §605).

DONE AND DATED IN AUGUSTA, MAINE THIS 26 DAY OF March, 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:

Mara Allen Robert Cone for
PATRICIA W. AHO, COMMISSIONER

The term of this license shall be ten (10) years from the signature date above.

[Note: If a complete renewal application, as determined by the Department, is submitted prior to expiration of this license, then pursuant to Title 5 MRSA §10002, all terms and conditions of the license shall remain in effect until the Department takes final action on the renewal of the license.]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 12/04/2013

Date of application acceptance: 12/06/2013

Date filed with the Board of Environmental Protection:

This Order prepared by Allison M. Hazard, Bureau of Air Quality.

